

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 9 AND 10, 2008**

**Laboratory:** TestAmerica-Irvine

**Field Duplicates:** B/W-28S-D1 and B/W-28S-D2, B/W-19I-D1 and B/W-19I-D2, W4CB-2-D1 and W4CB-2-D2

**Field Blank:** FB-01

**Parameters & Methods:** Dissolved Metals (200.7/200.8/245.1); Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>3</sub>/NO<sub>2</sub>, SO<sub>4</sub> (300.0); TOC (5310B); Alkalinity (2320B); TDS (2540C); pH (4500-H,B)

**Samples:**

Field Sample Identification	Date Sample Collected	SDG
B/W-8S	9-Jun-08	IRF0757
B/W-3S	9-Jun-08	IRF0757
MW-4	9-Jun-08	IRF0757
PW-10	9-Jun-08	IRF0757
PW-9	9-Jun-08	IRF0757
PW-7	9-Jun-08	IRF0757
PW-11	9-Jun-08	IRF0757
B/W-18S	9-Jun-08	IRF0888
B/W-28S-D1	9-Jun-08	IRF0888
B/W-28S-D2	9-Jun-08	IRF0888
FB-01	10-Jun-08	IRF0888
B/W-9S	10-Jun-08	IRF0888
PA-MW-1	9-Jun-08	IRF0888
B/W-19S	9-Jun-08	IRF0888
PW-5	9-Jun-08	IRF0888
PA-MW-3	9-Jun-08	IRF0888
B/W-8D	9-Jun-08	IRF0888
B/W-1S	9-Jun-08	IRF0888
PA-MW-2	9-Jun-08	IRF0888
B/W-19I-D1	9-Jun-08	IRF0888
B/W-19I-D2	9-Jun-08	IRF0888
B/W-5RD	10-Jun-08	IRF0888
MW2002-2I	10-Jun-08	IRF0888
PW-6	9-Jun-08	IRF0888

Field Sample Identification	Date Sample Collected	SDG
W4CB-2-D1	10-Jun-08	IRF0888
W4CB-2-D2	10-Jun-08	IRF0888
B/W-19D	10-Jun-08	IRF0888
B/W-5RI	10-Jun-08	IRF0888

Items Reviewed
Holding Times
Chain-of-Custody and Case Narratives
Blank Results
MS/MSD Results
LCS Results
Field and Laboratory Duplicate Results

**Qualifiers Summary Table**

Analyte(s)	SDG	Samples	Validation Qualifier	Reason(s) for Qualification
pH	IRF0757 IRF0888	All samples All samples	J	1 – Exceeded Holding Time
nitrite	IRF0888	PW-6	UJ	1 – Exceeded Holding Time
nitrite, nitrate, and total nitrite/nitrate	IRF0888	B/W-8D	J/UJ	1 – Exceeded Holding Time
iron	IRF0757	PW-9	UJ	7 – Field Blank Contamination
arsenic	IRF0757 IRF0888	PW-7 B/W-1S and W4CB-2-D1	UJ	7 – Field Blank Contamination
cobalt	IRF0757 IRF0888	B/W-3S, MW-4, and PW-9 B/W-28S-D1, PA-MW-1, PA-MW-3, B/W-1S, PA-MW-2, and MW2002-2I	UJ	7 – Field Blank Contamination
aluminum	IRF0888	PW-5, MW2002-2I, W4CB-2-D1, and W4CB-2-D2	J	4H – High MSD Recovery 5 –MS/MSD Imprecision
sulfate	IRF0757	All samples	J	4L – Low MS/MSD Recoveries
TOC	IRF0757	PW-7 and PW-11	J	4L – Low MSD Recovery

Analyte(s)	SDG	Samples	Validation Qualifier	Reason(s) for Qualification
cobalt and manganese	IRF0888	B/W-28S-D1 and B/W-28S-D2	J/UJ	8 –Field Duplicate Imprecision

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged “J” on the data tables. (Valid Reason Code: T)

**Data Validator:** Konstadina Vlahogiani

**Senior Reviewer:** Thomas H. Weinmann

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_103\_ GW\_2Q2008\_Metals

**Date:** July 30, 2008

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 11 AND 12, 2008**

**Laboratory:** TestAmerica-Irvine

**Field Duplicates:** PW-2-D1 and PW-2-D2

**Field Blank:** FB-03

**Equipment Blank:** EQ-01-GS

**Parameters & Methods:** Dissolved Metals (200.7/200.8/245.1); Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>3</sub>/NO<sub>2</sub>, SO<sub>4</sub> (300.0); TOC (5310B); Alkalinity (2320B); TDS (2540C); pH (4500-H,B)

**Samples:**

Field Sample Identification	Date Sample Collected	SDG
MW2002-1	11-Jun-08	IRF1148
B/W-27S	11-Jun-08	IRF1148
PW-8	11-Jun-08	IRF1148
B/W-27D	11-Jun-08	IRF1148
B/W-14	12-Jun-08	IRF1148
FB-03	12-Jun-08	IRF1148
B/W-20	12-Jun-08	IRF1148
B/W-4S	12-Jun-08	IRF1148
B/W-28D	12-Jun-08	IRF1148
B/W-28I	12-Jun-08	IRF1148
B/W-4I	12-Jun-08	IRF1148
B/W-4D	12-Jun-08	IRF1148
EQ-01-GS	11-Jun-08	IRF1148
PW-2-D1	11-Jun-08	IRF1148
PW-2-D2	11-Jun-08	IRF1148
USGS-13	11-Jun-08	IRF1148
W32DC	11-Jun-08	IRF1148
B/W-15	12-Jun-08	IRF1148
B/W-22	12-Jun-08	IRF1281
B/W-6D	12-Jun-08	IRF1281
B/W-6S	12-Jun-08	IRF1281
WW-1	12-Jun-08	IRF1281
B/W-10D	12-Jun-08	IRF1281
B/W-21	12-Jun-08	IRF1281

Field Sample Identification	Date Sample Collected	SDG
B/W-5RS	12-Jun-08	IRF1281
B/W-10S	12-Jun-08	IRF1281

Items Reviewed
Holding Times
Chain-of-Custody and Case Narratives
Blank Results
MS/MSD Results
LCS Results
Field and Laboratory Duplicate Results

**Qualifiers Summary Table**

Analyte(s)	SDG	Samples	Validation Qualifier	Reason(s) for Qualification
pH	IRF1148 IRF1281	All samples All samples	J	1 – Exceeded Holding Time
nitrite	IRF1148	PW-2-D1 and PW-2-D2	UJ	1 – Exceeded Holding Time
boron	IRF1148 IRF1281	B/W-27D and B/W-4D B/W-10D	UJ	2 – Method Blank Contamination
selenium	IRF1281	B/W-6D, B/W-21, and B/W-5RS	UJ	2 – Method Blank Contamination
cobalt	IRF1148  IRF1281	MW2002-1, B/W-27S, B/W-27D, B/W-14, B/W-20, B/W-4S, B/W-28D, B/W-28I, B/W-4I, USGS-13, and B/W-15 WW-1, B/W-10D, B/W-21, B/W-5RS, and B/W-10S	UJ	7 – Field Blank Contamination
manganese	IRF1148	B/W-27S	UJ	7 – Field Blank Contamination
nitrate and total nitrite/nitrate	IRF1148 IRF1281	B/W-28D and B/W-4D B/W-6D, B/W-10D, B/W-5RS, and B/W-10S	UJ	7 – Field Blank Contamination
beryllium and zinc	IRF1148	All samples, except B/W-27D, FB-03, and EQ-01-GS	J/UJ	4L – Low MS/MSD Recoveries
fluoride	IRF1148	PW-2-D1 and PW-2-D2	J	8 –Field Duplicate Imprecision

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged "J" on the data tables. (Valid Reason Code: T)

**Data Validator:** Konstadina Vlahogiani

**Senior Reviewer:** Thomas H. Weinmann

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_104\_ GW\_2Q2008\_Metals

**Date:** July 30, 2008

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 16, 2008**

**Laboratory:** TestAmerica-Irvine

**Field Blank:** FB-04

**Parameters & Methods:** Dissolved Metals (200.7/200.8/245.1); Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>3</sub>/NO<sub>2</sub>, SO<sub>4</sub> (300.0); TOC (5310B); Alkalinity (2320B); TDS (2540C); pH (4500-H,B)

**Samples:**

Field Sample Identification	Date Sample Collected	SDG
D5AC-1	16-Jun-08	IRF1386
B/W-29I1	16-Jun-08	IRF1386
B/W-13	16-Jun-08	IRF1386
MW-5	16-Jun-08	IRF1386
B/W-29S	16-Jun-08	IRF1386
FB-04	16-Jun-08	IRF1386
DW-133	16-Jun-08	IRF1386

Items Reviewed
Holding Times
Chain-of-Custody and Case Narratives
Blank Results
MS/MSD Results
LCS Results
Laboratory Duplicate Results

**Qualifiers Summary Table**

Analyte(s)	SDG	Sample(s)	Validation Qualifier	Reason(s) for Qualification
pH	IRF1386	D5AC-1, B/W-13, MW-5, B/W-29S, FB-04	J	1 – Exceeded Holding Time
chromium	IRF1386	B/W-13	UJ	2 – Method Blank Contamination

Analyte(s)	SDG	Sample(s)	Validation Qualifier	Reason(s) for Qualification
boron	IRF1386	MW-5	UJ	2 – Method Blank Contamination 7 – Field Blank Contamination
fluoride	IRF1386	B/W-29S	UJ	2 – Method Blank Contamination
cobalt and manganese	IRF1386	B/W-13	UJ	7 – Field Blank Contamination
copper and nitrate	IRF1386	B/W-29I1 and B/W-13	UJ	7 – Field Blank Contamination
nitrate	IRF1386	B/W-29S	UJ	7 – Field Blank Contamination
total nitrate-nitrite	IRF1386	B/W-13	UJ	7 – Field Blank Contamination
beryllium	IRF1386	D5AC-1, B/W-29I1, B/W-13, and B/W-29S	J/UJ	4L – Low MS/MSD Recoveries
potassium	IRF1386	D5AC-1, B/W-29I1, B/W-13, and B/W-29S	J	4H – High MS/MSD Recoveries
fluoride	IRF1386	MW-5	J	4L – Low MS/MSD Recoveries
fluoride	IRF1386	D5AC-1, B/W-29I1, and B/W-13	J	4H – High MS/MSD Recoveries

**Quantitation of Results:** Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged “J” on the data tables. (Valid Reason Code: T)

**Data Validator:** Konstadina Vlahogiani  
**Senior Reviewer:** Thomas H. Weinmann  
**Principal In-Charge:** Rock J. Vitale  
**Report No:** Verification\_Report\_105\_ GW\_2Q2008\_Metals  
**Date:** August 7, 2008



**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 18, 2008**

**Laboratory:** TestAmerica-Irvine

**Parameters & Methods:** Dissolved Metals (200.7/200.8); Cl, F, NO<sub>3</sub>, SO<sub>4</sub> (300.0); Alkalinity (2320B); TDS (2540C); pH (4500-H,B)

**Samples:**

Field Sample Identification	Date Sample Collected	SDG
DW-2	18-Jun-08	IRF1712
DW-18	18-Jun-08	IRF1712
DW-48	18-Jun-08	IRF1712
DW-50	18-Jun-08	IRF1712
TW-6	18-Jun-08	IRF1712
WELL 4	18-Jun-08	IRF1712

Items Reviewed
Holding Times
Chain-of-Custody and Case Narratives
Blank Results
MS/MSD Results
LCS Results
Laboratory Duplicate Results

**Qualifiers Summary Table**

Analyte(s)	SDG	Samples	Validation Qualifier	Reason(s) for Qualification
pH	IRF1712	All samples	J	1 – Exceeded Holding Time
manganese	IRF1712	DW-2, DW-18, DW-50, and TW-6	UJ	2 – Method Blank Contamination 7 – Field Blank Contamination
iron	IRF1712	DW-50 and TW-6	UJ	7 – Field Blank Contamination

Analyte(s)	SDG	Samples	Validation Qualifier	Reason(s) for Qualification
cobalt	IRF1712	DW-2, DW-18, and DW-48	UJ	7 – Field Blank Contamination
nitrate	IRF1712	TW-6 and WELL 4	UJ	7 – Field Blank Contamination
chloride	IRF1712	All samples	J	4H – High MS Recovery

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged “J” on the data tables. (Valid Reason Code: T)

Note: The Chain-of-Custody Record for sample DW-48 was not included in the data package provided.

**Data Validator:** Konstadina Vlahogiani

**Senior Reviewer:** Thomas H. Weinmann

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_106\_ GW\_2Q2008\_Metals

**Date:** August 7, 2008

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 10 AND 11, 2008**

**Laboratory:** TestAmerica-Irvine

**Field Duplicates:** W5AA-1-D1 and W5AA-1-D2

**Field Blank:** FB-02

**Parameters & Methods:** Dissolved Metals (200.7/200.8/245.1); Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>3</sub>/NO<sub>2</sub>, SO<sub>4</sub> (300.0); TOC (5310B); Alkalinity (2320B); TDS (2540C); pH (4500-H,B)

**Samples:**

Field Sample Identification	Date Sample Collected	SDG
B/W-9I	10-Jun-08	IRF1039
B/W-9D	10-Jun-08	IRF1039
W5BB	10-Jun-08	IRF1039
UW-1	10-Jun-08	IRF1039
W5AB-2	10-Jun-08	IRF1039
W5AB-3	10-Jun-08	IRF1039
D4BC-1	10-Jun-08	IRF1039
W5AA-1-D1	10-Jun-08	IRF1039
W5AA-1-D2	10-Jun-08	IRF1039
W5AA-3	11-Jun-08	IRF1039
B/W-25S	11-Jun-08	IRF1039
B/W-25I	11-Jun-08	IRF1039
PW-1	11-Jun-08	IRF1039
B/W-25D	11-Jun-08	IRF1039
USGS-2B	11-Jun-08	IRF1039
B/W-2I	11-Jun-08	IRF1039
B/W-2D	11-Jun-08	IRF1039
FB-02	11-Jun-08	IRF1039

Items Reviewed
Holding Times
Chain-of-Custody and Case Narratives
Blank Results
MS/MSD Results
LCS Results
Field and Laboratory Duplicate Results

**Qualifiers Summary Table**

Analyte(s)	SDG	Samples	Validation Qualifier	Reason(s) for Qualification
pH	IRF1039	All samples	J	1 – Exceeded Holding Time
TDS	IRF1039	FB-02	R	1 – Grossly Exceeded Holding Time
boron	IRF1039	B/W-9I	UJ	2 – Method Blank Contamination
fluoride	IRF1039	B/W-9D and W5BB	UJ	2 – Method Blank Contamination
arsenic	IRF1039	W5AB-2 and W5AB-3	UJ	7 – Field Blank Contamination
cobalt	IRF1039	W5BB, W5AB-3, D4BC-1, W5AA-1-D1, W5AA-1-D2, W5AA-3, B/W-25S, B/W-25I, and B/W-25D	UJ	7 – Field Blank Contamination
iron	IRF1039	W5AB-2	UJ	7 – Field Blank Contamination
manganese	IRF1039	B/W-25S	UJ	7 – Field Blank Contamination
zinc	IRF1039	All samples	J/UJ	4L – Low MS/MSD Recoveries

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged “J” on the data tables. (Valid Reason Code: T)

**Data Validator:** Konstadina Vlahogiani

**Senior Reviewer:** Thomas H. Weinmann

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_107\_ GW\_2Q2008\_Metals

**Date:** July 30, 2008

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 9, 10, AND 11, 2008**

**SDGs:** 38020, 38021

**Laboratory:** TestAmerica-Richland

**Field Duplicates:** B/W-28S-D1 and B/W-28S-D2, B/W-19I-D1 and B/W-19I-D2, W4CB-2-D1 and W4CB-2-D2, W5AA-1-D1 and W5AA-1-D2

**Field Blanks:** FB-01, FB-02

**Parameters:** Gross Alpha, Gross Beta, Ra-226, Ra-228, Th-228, Th-230, Th-232

**Samples:**

Field Sample Identification	Date Sample Collected	Lot No.	Report No.
B/W-8S	9-Jun-08	J8F160127	39441
PW-6	9-Jun-08	J8F160127	39441
MW-4	9-Jun-08	J8F160127	39441
PW-10	9-Jun-08	J8F160127	39441
PW-9	9-Jun-08	J8F160127	39441
PW-11	9-Jun-08	J8F160127	39441
B/W-18S	9-Jun-08	J8F160127	39441
PA-MW-1	9-Jun-08	J8F160127	39441
B/W-19S	9-Jun-08	J8F160127	39441
PA-MW-3	9-Jun-08	J8F160127	39441
B/W-8D	9-Jun-08	J8F160127	39441
B/W-1S	9-Jun-08	J8F160127	39441
PA-MW-2	9-Jun-08	J8F160127	39441
B/W-19I-D1	9-Jun-08	J8F160127	39441
B/W-19I-D2	9-Jun-08	J8F160127	39441
UW-1	10-Jun-08	J8F160127	39441
W5AB-2	10-Jun-08	J8F160127	39441
FB-01	10-Jun-08	J8F160127	39441
PW-1	11-Jun-08	J8F160127	39441
USGS-2B	11-Jun-08	J8F160127	39441
B/W-28S-D1	9-Jun-08	J8F160148	39446
B/W-28S-D2	9-Jun-08	J8F160148	39446
PW-5	9-Jun-08	J8F160148	39446
PW-7	9-Jun-08	J8F160148	39446

Field Sample Identification	Date Sample Collected	Lot No.	Report No.
B/W-3S	9-Jun-08	J8F160148	39446
B/W-9I	10-Jun-08	J8F160148	39446
B/W-9D	10-Jun-08	J8F160148	39446
W5BB	10-Jun-08	J8F160148	39446
W5AB-3	10-Jun-08	J8F160148	39446
B/W-5RD	10-Jun-08	J8F160148	39446
MW2002-2I	10-Jun-08	J8F160148	39446
B/W-9S	10-Jun-08	J8F160148	39446
W4CB-2-D1	10-Jun-08	J8F160148	39446
W4CB-2-D2	10-Jun-08	J8F160148	39446
B/W-19D	10-Jun-08	J8F160148	39446
B/W-5RI	10-Jun-08	J8F160148	39446
D4BC-1	10-Jun-08	J8F160148	39446
W5AA-1-D1	10-Jun-08	J8F160148	39446
W5AA-1-D2	10-Jun-08	J8F160148	39446
FB-02	11-Jun-08	J8F160148	39446

Items Reviewed
Holding Times
Chain-of-Custody and Case Narrative
Blank Results
LCS Results
MS/MSD Results
Field and Laboratory Duplicate Results
Chemical Yield

**Qualifiers Summary Table**

Analyte	Report No.	Samples	Validation Qualifier	Reason for Qualification
gross alpha	39441 39446	All samples, except FB-01 All samples, except FB-02	J/UJ	4L – Low MS/MSD Recoveries
radium-228	39441	All samples	J/UJ	4L – Low MS/MSD Recoveries

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged "J" on the data tables. (Valid Reason Code: T)

**Data Validator:** Konstadina Vlahogiani

**Senior Reviewer:** Thomas H. Weinmann

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_108\_ GW\_2Q2008\_Rad

**Date:** July 31, 2008

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 16 AND 17, 2008**

**Laboratory:** TestAmerica-Irvine

**Field Duplicates:** B/W-7-D1 and B/W-7-D2, MW-2-D1 and MW-2-D2

**Field Blank:** FB-05

**Parameters & Methods:** Total and Dissolved Metals (200.7/200.8/245.1); Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>3</sub>/NO<sub>2</sub>, SO<sub>4</sub> (300.0); TOC (5310B); Alkalinity (2320B); TDS (2540C); pH (4500-H,B)

**Samples:**

Field Sample Identification	Date Sample Collected	SDG
B/W-23	16-Jun-08	IRF1528
B/W-29D	16-Jun-08	IRF1528
B/W-16	16-Jun-08	IRF1528
W5DB	16-Jun-08	IRF1528
MW2002-2	16-Jun-08	IRF1528
WW-40	16-Jun-08	IRF1528
B/W-7-D1	16-Jun-08	IRF1528
B/W-7-D2	16-Jun-08	IRF1528
MW-2-D1	17-Jun-08	IRF1528
MW-2-D2	17-Jun-08	IRF1528
PW-4	17-Jun-08	IRF1528
DW-43	17-Jun-08	IRF1528
FB-05	17-Jun-08	IRF1528
WW-36	17-Jun-08	IRF1528
PW-3	17-Jun-08	IRF1528
WW-59	17-Jun-08	IRF1528
B/W-111	17-Jun-08	IRF1528
MW-1	17-Jun-08	IRF1528
B/W-112	17-Jun-08	IRF1528
B/W-1D	17-Jun-08	IRF1528



Items Reviewed
Holding Times
Chain-of-Custody and Case Narratives
Blank Results
MS/MSD Results
LCS Results
Field and Laboratory Duplicate Results

**Qualifiers Summary Table**

Analyte(s)	SDG	Sample(s)	Validation Qualifier	Reason(s) for Qualification
pH	IRF1528	All samples	J	1 – Exceeded Holding Time
TDS	IRF1528	MW-2-D1	J	1 – Grossly Exceeded Holding Time
boron	IRF1528	MW-2-D1, MW-2-D2, and B/W-1I2	UJ	2 – Method Blank Contamination
cobalt	IRF1528	B/W-23, W5DB, MW2002-2, WW-40, WW-59, B/W-1I1, and MW-1	UJ	7 – Field Blank Contamination
copper	IRF1528	B/W-29D and W5DB	UJ	7 – Field Blank Contamination
iron	IRF1528	DW-43 and MW-1	UJ	7 – Field Blank Contamination
manganese	IRF1528	B/W-16, W5DB, MW2002-2, WW-40, DW-43, MW-1, and B/W-1I2	UJ	7 – Field Blank Contamination
nitrate	IRF1528	B/W-29D	UJ	7 – Field Blank Contamination
nitrate and total nitrate-nitrite	IRF1528	B/W-23, B/W-16, W5DB, and WW-40	UJ	7 – Field Blank Contamination
fluoride and nitrite	IRF1528	All samples, except FB-05	J/UJ	4L – Low MS and/or MSD Recoveries
lithium	IRF1528	B/W-16, WW-40, B/W-7-D1, B/W-7-D2, WW-36, and PW-3	J	4H – High MS/MSD Recoveries
phosphorus	IRF1528	W5DB, MW2002-2, WW-40, B/W-7-D1, B/W-7-D2, WW-36, and WW-59	J	4H – High MS/MSD Recoveries 5 – MS/MSD Imprecision
potassium	IRF1528	All samples, except DW-43 and FB-05	J	4H – High MSD Recovery

Analyte(s)	SDG	Sample(s)	Validation Qualifier	Reason(s) for Qualification
molybdenum	IRF1528	All samples, except DW-43, MW-2-D1, MW-2-D2, PW-4, and FB-05	J	4H – High MS Recovery
fluoride	IRF1528	MW-2-D1 and MW-2-D2	J	8 – Field Duplicate Imprecision

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged “J” on the data tables. (Valid Reason Code: T)

**Data Validator:** Thomas H. Weinmann

**Senior Reviewer:** Eric T. Lahr

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_109\_ GW\_2Q2008\_Metals

**Date:** August 7, 2008

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 17, 18, AND 19, 2008**

**Laboratory:** TestAmerica-Irvine

**Field Duplicates:** B/W-11D3-D1 and B/W-11D3-D2, B/W-3D-D1 and B/W-3D-D2,  
DW-10-D1 and DW-10-D2, DW-47-D1 and DW-47-D2

**Field Blank:** FB-06

**Parameters & Methods:** Total and Dissolved Metals (200.7/200.8/245.1); Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>3</sub>/NO<sub>2</sub>, SO<sub>4</sub>  
(300.0); TOC (5310B); Alkalinity (2320B); TDS (2540C); pH (4500-H,B)

**Samples:**

Field Sample Identification	Date Sample Collected	SDG
B/W-113D-D1	18-Jun-08	IRF1708
B/W-113D-D2	18-Jun-08	IRF1708
B/W-18D	18-Jun-08	IRF1708
B/W-18I	18-Jun-08	IRF1708
B/W-29I2	18-Jun-08	IRF1708
FB-06	18-Jun-08	IRF1708
B/W-11S	17-Jun-08	IRF1708
B/W-3I	17-Jun-08	IRF1708
B/W-11D	17-Jun-08	IRF1708
B/W-3D-D1	17-Jun-08	IRF1708
B/W-3D-D2	17-Jun-08	IRF1708
DW-52	18-Jun-08	IRF1779
DW-46	18-Jun-08	IRF1779
DW-49	18-Jun-08	IRF1779
DW-36	18-Jun-08	IRF1779
DW-39	18-Jun-08	IRF1779
WW-2	18-Jun-08	IRF1779
DW-4	18-Jun-08	IRF1779
WDW018	18-Jun-08	IRF1779
DW-38	18-Jun-08	IRF1779
DW-45	18-Jun-08	IRF1779
DW-40	18-Jun-08	IRF1779
DW-41	18-Jun-08	IRF1779

Field Sample Identification	Date Sample Collected	SDG
DW-10-D1	18-Jun-08	IRF1779
DW-10-D2	18-Jun-08	IRF1779
DW-47-D1	18-Jun-08	IRF1779
DW-47-D2	18-Jun-08	IRF1779
WDW019	19-Jun-08	IRF1779

Items Reviewed
Holding Times
Chain-of-Custody and Case Narratives
Blank Results
MS/MSD Results
LCS Results
Field and Laboratory Duplicate Results

**Qualifiers Summary Table**

Analyte(s)	SDG	Sample(s)	Validation Qualifier	Reason(s) for Qualification
pH	IRF1708 IRF1779	All samples All samples	J	1 – Exceeded Holding Time
nitrate, nitrite, and total nitrate/nitrite	IRF1708	B/W-11S, B/W-3I, B/W-11D, B/W-3D-D1, and B/W-3D-D2	UJ	1 – Exceeded Holding Time
arsenic	IRF1779	DW-4	UJ	2 – Method Blank Contamination
cobalt	IRF1708 IRF1779	B/W-11D3-D1 and B/W-11D3-D2 DW-46 and WDW019	UJ	7 – Field Blank Contamination
iron	IRF1708 IRF1779	B/W-3I DW-52, DW-49, DW-39, DW-4, and WW-2	UJ	7 – Field Blank Contamination
manganese	IRF1779	DW-52, DW-46, DW-49, DW-36, DW-4, and DW-41	UJ	7 – Field Blank Contamination
nitrate and total nitrate-nitrite	IRF1708 IRF1779	B/W-18I DW-52, DW-36, DW-39, WW-2, DW-4, WDW018, DW-45, DW-40, DW-41, DW-10-D1, and DW-10-D2	UJ	7 – Field Blank Contamination
TOC	IRF1708	B/W-11D3-D2, B/W-29I2, B/W-11S, and B/W-11D	J	4H – High MS/MSD Recoveries

Analyte(s)	SDG	Sample(s)	Validation Qualifier	Reason(s) for Qualification
TOC	IRF1708	B/W-113D-D1 and B/W-113D-D2	J/UJ	8 – Field Duplicate Imprecision

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged "J" on the data tables. (Valid Reason Code: T)

**Data Validator:** Thomas H. Weinmann

**Senior Reviewer:** Eric T. Lahr

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_110\_GW\_2Q2008\_Metals

**Date:** August 7, 2008

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 11 AND 12, 2008**

**SDGs:** 38037, 38039

**Laboratory:** TestAmerica-Richland

**Field Duplicates:** PW-2-D1 and PW-2-D2

**Field Blank:** FB-03

**Equipment Blank:** EQ-01

**Parameters:** Gross Alpha, Gross Beta, Ra-226, Ra-228, Th-228, Th-230, Th-232

**Samples:**

Field Sample Identification	Date Sample Collected	Lot No.	Report No.
B/W-6S	12-Jun-08	J8F170266	39597
WW-1	12-Jun-08	J8F170266	39597
B/W-5RS	12-Jun-08	J8F170266	39597
B/W-6D	12-Jun-08	J8F170266	39597
B/W-28D	12-Jun-08	J8F170266	39597
B/W-21	12-Jun-08	J8F170266	39597
B/W-10D	12-Jun-08	J8F170266	39597
B/W-10S	12-Jun-08	J8F170266	39597
B/W-22	12-Jun-08	J8F170266	39597
B/W-4I	12-Jun-08	J8F170241	39617
B/W-15	12-Jun-08	J8F170241	39617
B/W-14	12-Jun-08	J8F170241	39617
B/W-20	12-Jun-08	J8F170241	39617
B/W-25I	11-Jun-08	J8F170241	39617
B/W-25S	11-Jun-08	J8F170241	39617
B/W-4S	12-Jun-08	J8F170241	39617
B/W-4D	12-Jun-08	J8F170241	39617
EQ-01	11-Jun-08	J8F170241	39617
PW-2-D1	11-Jun-08	J8F170241	39617
PW-2-D2	11-Jun-08	J8F170241	39617
FB-03	12-Jun-08	J8F170241	39617
PW-8	11-Jun-08	J8F170241	39617
B/W-25D	11-Jun-08	J8F170241	39617
W5AA-3	11-Jun-08	J8F170241	39617

Field Sample Identification	Date Sample Collected	Lot No.	Report No.
B/W-27D	11-Jun-08	J8F170241	39617
B/W-27S	11-Jun-08	J8F170241	39617
W32DC	11-Jun-08	J8F170241	39617
USGS-13	11-Jun-08	J8F170241	39617
B/W-2I	11-Jun-08	J8F170241	39617
B/W-2D	11-Jun-08	J8F170241	39617
MW2002-1	11-Jun-08	J8F170241	39617

Items Reviewed
Holding Times
Chain-of-Custody and Case Narrative
Blank Results
LCS Results
MS/MSD Results
Field and Laboratory Duplicate Results
Chemical Yield

#### Qualifiers Summary Table

Analyte	Report No.	Sample(s)	Validation Qualifier	Reason for Qualification
radium-228	39597	All samples	J/UJ	4L – Low MS/MSD Recoveries
radium-228	39617	B/W-25D, B/W-27D, B/W-27S, B/W-2D, B/W-2I, MW2002-1, PW-8, USGS-13, W32DC, and W5AA-3	UJ	4L – Low MS Recovery
radium-226	39597	WW-1	J	4H – High MSD Recovery

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged “J” on the data tables. (Valid Reason Code: T)

**Data Validator:** Thomas H. Weinmann

**Senior Reviewer:** Eric T. Lahr

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_111\_ GW\_2Q2008\_Rad

**Date:** August 22, 2008

**DATA VERIFICATION OF THE AQUEOUS SAMPLES COLLECTED AT THE  
ARCO YERINGTON MINE SITE ON JUNE 12, 16, 17, AND 18, 2008**

**SDGs:** 38049, 38059, 38071

**Laboratory:** TestAmerica-Richland

**Field Duplicates:** B/W-7-D1 and B/W-7-D2, MW-2-D1 and MW-2-D2, B/W-3D-D1 and B/W-3D-D1, B/W-11D3-D1 and B/W-11D3-D2

**Field Blank:** FB-04, FB-05, FB-06

**Parameters:** Gross Alpha, Gross Beta, Ra-226, Ra-228, Th-228, Th-230, Th-232

**Samples:**

Field Sample Identification	Date Sample Collected	Lot No.	Report No.
MW-5	16-Jun-08	J8F180307	39534
B/W-23	16-Jun-08	J8F180307	39534
B/W-28I	12-Jun-08	J8F180307	39534
B/W-13	16-Jun-08	J8F180307	39534
B/W-29S	16-Jun-08	J8F180307	39534
B/W-29I1	16-Jun-08	J8F180307	39534
D5AC-1	16-Jun-08	J8F180307	39534
FB-04	16-Jun-08	J8F180307	39534
B/W-16	16-Jun-08	J8F190346	39533
B/W-7-D1	16-Jun-08	J8F190346	39533
B/W-7-D2	16-Jun-08	J8F190346	39533
WW-40	16-Jun-08	J8F190346	39533
MW2002-2	16-Jun-08	J8F190346	39533
B/W-29D	16-Jun-08	J8F190346	39533
MW-1	17-Jun-08	J8F190346	39533
FB-05	17-Jun-08	J8F190346	39533
WW-36	17-Jun-08	J8F190346	39533
MW-2-D1	17-Jun-08	J8F230122	39581
MW-2-D2	17-Jun-08	J8F230122	39581
B/W-11S	17-Jun-08	J8F230122	39581
B/W-1D	17-Jun-08	J8F230122	39581
PW-3	17-Jun-08	J8F230122	39581
B/W-11I	17-Jun-08	J8F230122	39581
B/W-11I2	17-Jun-08	J8F230122	39581



Field Sample Identification	Date Sample Collected	Lot No.	Report No.
B/W-11D	17-Jun-08	J8F230122	39581
FB-06	18-Jun-08	J8F230122	39581
W5DB	16-Jun-08	J8F230122	39581
PW-4	17-Jun-08	J8F230122	39581
B/W-18I	18-Jun-08	J8F230122	39581
B/W-18D	18-Jun-08	J8F230122	39581
B/W-3D-D1	17-Jun-08	J8F230122	39581
B/W-3D-D2	17-Jun-08	J8F230122	39581
B/W-29I2	18-Jun-08	J8F230122	39581
WW-2	18-Jun-08	J8F230122	39581
B/W-11D3-D1	18-Jun-08	J8F230122	39581
B/W-11D3-D2	18-Jun-08	J8F230122	39581
B/W-3I	17-Jun-08	J8F230122	39581
WW-59	17-Jun-08	J8F230122	39581

Items Reviewed
Holding Times
Chain-of-Custody and Case Narrative
Blank Results
LCS Results
MS/MSD Results
Field and Laboratory Duplicate Results
Chemical Yield

**Qualifiers Summary Table**

Analyte	Report No.	Samples	Validation Qualifier	Reason for Qualification
radium-228	39534	B/W-13, B/W-23, B/W-28I, B/W-29I1, B/W-29S, D5AC-1, and MW-5	J/UJ	4L – Low MS Recovery
	39533	B/W-16, B/W-7-D1, B/W-7-D2, MW2002-2, WW-40, B/W-29D, MW-1, and WW-36		

Analyte	Report No.	Samples	Validation Qualifier	Reason for Qualification
radium-228	39581	B/W-18D, B/W-18I, B/W-29I2, B/W-3D-D1, B/W-3D-D2, B/W-3I, B/W-11D3-D1, B/W-11D3-D2, WW-2, and WW-59	J/UJ	4L – Low MS/MSD Recoveries
gross alpha	39581	B/W-11D, B/W-1D, B/W-1I1, B/W-1I2, W5DB, B/W-11S, MW-2-D1, MW-2-D2, PW-3, and PW-4	J	4L – Low MS/MSD Recoveries

Quantitation of Results: Based on standard project reporting requirements, all positive results reported at concentrations greater than the method detection limit but less than the reporting limit were qualified as estimated and have been flagged "J" on the data tables. (Valid Reason Code: T)

Note:

The sample IDs for samples B/W-11D3-D1 and B/W-11D3-D1 were incorrectly reported as W/W-11D3-D1 and W/W-11D3-D1, respectively, in the data package.

**Data Validator:** Thomas H. Weinmann

**Senior Reviewer:** Eric T. Lahr

**Principal In-Charge:** Rock J. Vitale

**Report No:** Verification\_Report\_112\_GW\_2Q2008\_Rad

**Date:** August 22, 2008